BRUHAT BANGALORE MAHANAGARA PALIKE

RA BILL - 04

NAME OF THE WORK: White Topping of Road from Seshadripuram first grade College to Aroma Bakery Junction via 3rd Cross road,1st Main Road and 16th B Cross Road.

CLIENT: BRUHAT BANGALORE MAHANAGARA PALIKE

CONSULTANTS: Infra Support Engineering Consultants Pvt Ltd.

AGENCY: M/s **NCC LIMITED**

BILL ABSTRACT

Original / Duplicate / Triplicate

CONTRACT CERTIFICATE

(For Other Works)

Estimate cost: 1393.00 Lakhs

No.:- **4th and Final Bill** Date.....20.....

Job Number: 004-20-000091(P-3756)

Division : **Projects Division, Yelahanka**

Bill Received No.....Dated.....Cash Book Voucher No.....dated.....

Scheduled Docket No

Name of Work: White Topping of road from Sheshadripuram First Grade College to Aroma Bakery Junction via 3rd Cross Road 1st A main Road, 16th B Cross Road.

Name of Contractor and Full Address : **M/s. NCC Limited**, No. 301, Batavia Chambers, 8, Kumarakrupa Road, Bengaluru – 560 001

Reference to Agreement No: EE/Project/AG No:181/2020-21 Dated : 08.02.2021

Certified that the measurements were taken by me on 30/10/2023 and recorded of pages 583541 to 583855 of measurement Book No 14/20-21 and that the work is satisfactorily executed..

Contractor

Officer-in-charge of work

Certified that the measurements were taken by me on 30/10/23 and found correct. The work is satisfactorily executed.

Certified that the quantities of materials shown in column 3 of Account II have been actually brought to site of the work and the contractor has not previously received any advance on this security. These materials are of an imperishable nature and are all required for immediate use on the work in connection with items for finished work have been agreed upon. A normal agreement signed and executed by the contractor is recorded in the office.

Office - 13691487-2
Phone - 8951708774-2

Sub-Division Officer

A.E.E. (Project)

If Memorandum of Payment

1)	Total value of work done or supplies made as per account within	BQ 4734400-2
2)	Deduct amount to be held in reserve being.....percent Rs.....	Li 94700-2
3)	Deduct amount to be held in Balance	Cui 42280-2
4)	Deduct Payment :	Sei 42280-2
	a) Amount of previous payment as in the Office Cash Book Voucher No.....Dated.....S.D No.....	LR 80930-2
	Amount adjusted towards cash advance recovery of	GF 4740-2
	b) Payments cost store or other materials supplied.	Leaf 47400-2
	Now made recovery of amount creditable to this/other work	65071-2
	Amount paid on this bill Cheque/Cash	3188371-2
5)	Balance being unpaid value of work done held in reserve	1415529-2
6)	Deduct cash advance made on the office Cash Book Voucher No..... date .....less adjustments	
7)	Net amount due to or from contractor	
	Unadjusted items	
8)	Advance to contractor for materials brought to site (as detailed) within value of Government materials supplied	

Audit 2022-23 Rajendra

Contractor's Signature

Received Rs.....(in works)

.....

By Cash and by adjustment of Payment as per memorandum.

Witnesses :

1.

2.

Dated.....Signature of Contractor

(For use in the Office)

Head of Account P 3756

Audited & admitted for Rs. 4734400-2

Paid by me by cheque No.....Dated..... 1415529-2

Cash Rs.....Dated.....

.....by Cheque

and Rs. 3188371-2 by Adjustment

Initials of Officer Making Payment

Executive Engineer

M. Asst. Clerk Project Division

Acct. Supdt. Project Division B.B.M.P.

Exe. Engineer Project Division B.B.M.P

BRUHAT BENGALURU MAHANAGAR PALIKE

Whitetopping of road from Shesadripuram First Grade College to Aroma Bakery Junction via 3rd A cross Road,1st A Main Road,16th B Cross Road

ABSTRACT RA BILL -04

SL. NO	ITEM CODE	ITEM NAME	UNIT	BOQ QTY	RATE	AMOUNT	PREVIOUS QTY	AMOUNT	PRESENT QTY	AMOUNT	UPTO DATE QTY	AMOUNT	REMARKS
1	1	Milling the bituminous pavement surface upto a depth of 55mm using milling machine, to make a uniform surface without disturbing the base, cleaning the milled surface, including cost of all labour charges and hire charges of machineries etc complete., including stacking the milled material on the sides of road.	Sqm	4443.75 3262.75	60.00	2,66,625	2709.75	1,62,585.0	420.00 550.00	33,000.00 25200.00	3129.75 3259.75	1,95,585.0 187785.00	
2	2	KSRRB 300-50.Scarifying bitiminous course 50mm to 75mm thick along with premix carpet/surface dressing by power roller attached with scarifer without disturbing the base and stacking the debris including cost of all labour charges ,HOM of machineries complete as per specifications.MORTH / Chapter 3	Sqm	29955.00 2910.33	50.00	14,97,750	2070.33	1,03,516.3	840.00	42,000.00	2910.33	1,45,516.3	
3	3	KSRRB 300-48. Scarifying kankar/gravel/metal crust upto 150mm thick with power roller attached with scarifier ,disposal of stuff including cost of all labour charges,HOM of machineries complete as per specifications.MORTH/Chapter 3	sqm	7725.00	50.00	3,86,250		-		-		-	
4	4	Excavation in Soil with Dozer KSRRB M300-11. Excavation for road way in all types of soil by mechanical means including cutting and pushing the earth to site of embankment including trimming bottom and side slopes in accordance with requirements of lines, grades and cross sections complete as per	Cum	1629.38	75.00	1,22,204		-		-		-	
5	5	Construction of granular sub-base Grading-V as Sub-base and drainage layer by providing coarse graded crushed stone aggregates of granite/ trap/basalt material, mixing in a mechanical mix plant at OMC, Carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the 98 % proctor density, complete as per specifications. Clause	Cum	1943.62 178.25	1600.00	31,09,792	159.01	2,54,415.6	14.24 14.85	23,760.00 22784.00	173.25 173.86	2,78,175.6 277200.00	
6	6	KSRRB M400-17. Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to wet mix macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed materials by tipper to site, laying in uniform layers with paver in sub-base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as	Cum	3019.35 2312.80	1600.00	48,30,960	1090.89	17,45,417.9	1155.28	18,48,440.86	2246.16	35,93,858.8	
7	7	KSRRB 500-11. Providing and laying bituminous macadam on prepared surface with crushed coarse aggregates as per design mix formula for base I binding course including loading of aggregates with F. E. loader, hot mixing of stone aggregates and bitumen in hot mix plant,transporting the mixed material in tipper to paver and laying mixed materials with paver finisher to the required level and grade, rolling by smooth wheeled,vibratory & tandem rollers to achieve the desired density, but excluding cost of primer I tack coat & including lead, lift and cost of all materials,labour, HOM complete as per specifications. Clause 504 of MORTH V revision -do - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-11(50 mm to 75 mm) with 3.4% VG-30 Bitumen	276.75 Cum	777.66	6000.00	46,65,960	276.88	16,61,288.6	(-) 0.13	600.00 Reduct	276.88 780.00	16,61,288.6	

NO	CODE											
8	8	Dry Lean Concrete (DLC) for Profile correction of existing bituminous road surface before carrying out White Topping Dry Lean Concrete (DLC) M-5 for Profile correction of existing bituminous road surface before carrying out White Topping Construction of dry lean cement concrete sub base layer over existing scarified (to the depth of 25 mm with miller machine includes mobilization, diesel and operating cost, includes cleaning by air blower/sand blasting/brooming etc.) bituminous road surface with coarse and fine aggregate conforming to IS 383, the size of coarse aggregate not exceeding 25mm, aggregate cement ratio notto exceed 15:1, aggregate gradation after blending to be as per Table 600-1, cement content not less than 160 kg/cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in ready mix concrete plant or a batching plant (to ensure consistency) transported to site, laid to the depth of 40 mm - 50 mm with a fixed form paver with electric sensor, having gang mounted vibrators equally spaced with variable rpm and atleast three integral steel tubes with 8-10 tonnes vibratory rollers for screeding, levelling, compaction, finishing and curing, includes lifting/shifting charges of paver, as per specifications complete. (cement 160kgs. coarse aggregate=	Cum	207.56	3800.00	7,88,728	207.56	7,88,712.0	57.12	2,17,056.00	264.68	10,05,768.0
9	9	Providing and laying White Topping as per IRC:SP76-2008 over bituminous surface (Existing bituminous surface preparation to be done if necessary either by milling or levelling course with BM/DBM to correct surface profile and to be paid separately) with unreinforced M-40 grade pavement quality concrete (PQC)using polymeric synthetic fibre as per ASTM (1116) such as polyester I polyethylene I polypropylene at 1.20 kg/cum, mixed in batching and mixing plant or weigh batcher as per approved mix design to achieve minimum flexural strength or modulus of rupture of concrete 4.50 MPa at 28 days limiting maximum water cement ratio to 0.40, transported to site, laid with mechanical paver finisher, spread, vibrated, compacted and finished in a continuous operation to the lines and grades as per drawing, texture finishing of surface, spraying two layers of curing compound, curing with water sprayed on hessian cloth coverd over concrete surface, groove cutting to a depth of 1/3 of the slab depth and of width 3-5 mm including the cost of filling the joint with joint sealant as per IRC-15. as per design (grove cutting to be paid separately). For Thin white Topping and ultra thin white topping the groove cutting shall be 1.25mm x 1.25m grid including cost of all materal, side form work, labour and HOM of machineries etc. complete as per specifications.) -Do- with	Cum	3065.21	6500.00	1,99,23,865	2694.33	1,75,13,145.0	425.25	27,64,115.90	3119.58	2,02,77,260.9
10	10	Providing groove cutting for width of 4mm - 6mm and 1/3rd depth of PQC Whitetopping within 8-10 hrs of placing/finishing of PQC including cost of cutting machine, generators, HOM of machinery, blades, coolant etc., including cleaning of groove and providing sand and hot bituminous or equivalent approved sealant filling etc., including cost of conveyance of all materials, labour, lead and lift charges and all other incidental charges as per drawing and as per specifications.	m	23700.00	75.00	17,77,500	23700.00	17,77,500.0	7303.90	5,47,792.50	31003.90	23,25,292.5

NO	CODE												
11	11	Providing and inserting of 12mm dia TMT bar at 500mm c/c & applying Lokfix of Fosroc chemical of approved brand for tie rods of 12mm dia & 500mm length for the construction of longitudinal joint in Pavement Quality Concrete (PQC) at every 500mm centre to centre along the length of the road, the 50% of the tie rods should be embeded on both sides of joint. The tie rod should be inserted in the PQC concrete with applying lokfix including cost of conveyance of all materials , labour, lead and lift charges and all other incidental charges as per the drawing, specifications and direction of Engineer In-charge etc., complete.	Nos	3950.00	100.00	3,95,000	3098.00	3,09,800.0	560.00	56,000.00	3658.00	3,65,800.0	
12	12	Providing and fixing DOWEL bars of dia 25mm,500mm length for construction joint in pavement Quality Concrete (PQC) at every construction joints along the width of the road ,the 50% of the dowel bar should be embeded on boths dies of joints,the exposed bar should be covered with PVC sleeves.The bar should be paints with epoxy paint and primer including cost of conveyance of all materials,labour lead and lift charges and all other incidental charges as per he drawing, specifications and	Nos	660.00	450.00	2,97,000	660.00	2,97,000.0	137.00	61,650.00	797.00	3,58,650.0	
13	13	KSRRB 500-9. Providing and applying tack coat using 80/100 grade bitumen (VG10) on granular base such as WMM / WBM surfaces hot bitumen primed at 4 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Chapter 5	Sqm	6780.00	25.00	1,69,500		-		-		-	
14	14	KSRRB 500-7. Providing and applying tack coat using 80/100 grade bitumen (VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Chapter 5	Sqm	17148.75	15.00	2,57,231	6897.99	1,03,469.9	402.61	6,039.07	7300.60	1,09,509.0	
15	15	KSRRB M500-17. Providing and laying dense graded bituminous macadam using crushed aggregates of specified grading, premixed with VG30 grade bituminous binder and, transporting the hot mix to work site, laying to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 505 of MORTH V revision - do - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-11 (50 mm to 75 mm) with 4.5 % VG-30 Bitumen	Cum	339.00	7200.00	24,40,800	97.55	7,02,378.0	25.24	1,81,727.28	122.79	8,84,105.3	
16	16	Providing and laying bituminous concrete 40mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, ransporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction in all respects complete as per specifications. Clause 507 of MORTH V revision as per IRC SP-53-2015. using 40-60 TPH capacity HMP with mechanical paver grading II (30-45mm) with 5.4% of modified bituminous binder consisting of 4.97% ofVG-30 bitumen (60/70 grade) and 0.43% of plastomeric thermoplastics (waste plastic)	Cum	271.20	8500.00	23,05,200		-		-		-	

NO	CODE												
17	17	KSRB 14.6-1: Providing and laying heavy duty cobble stones 100mm thick interlock pavers, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of M40 over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS	Sqm	5925.00	1200.00	71,10,000	4244.32	50,93,178.6	865.84	10,39,008.00	5110.16	61,32,186.6	
18	18	KSRRB M2200-5.6. Providing and laying Design mix M30 with OPC @ 360kgs, with 20mm and down size graded granite metal coarse aggregates @0.69cum and fine aggregates @ 0.46cum, with superplastisiser @31ts confirming to 189103-1999 Reaffirmed-2008 including cost of materials, labour, HOM curing, form works, scaffolding and centering complete as per specifications. - i) upto 5 m height	Cum	180.82	6500.00	11,75,330	91.29	5,93,387.9	81.33	5,28,641.75	172.62	11,22,029.7	
19	19	KSRRB M800-43. Installation of a steel portable barricade with horizontal rail 300 mm wide, 2.5 m in length fitted on a 'A' frame made with 45 x 45 x 5 mm angle iron section, 1.5 m in height, horizontal rail painted (2 coats) with yellow and white stripes, 150 mm in width at an angle of 45º, 'A' frame painted with 2 coats of yellow paint, complete as per IRC:SP:55-2001 complete as per specifications.	Each	131.67	2500.00	3,29,175	131.00	3,27,500.0	118.00	2,95,000.00	249.00	6,22,500.0	
20	20	Road Marking with Hot Applied Thermoplastic Compound with Reflectrising Glass Beads on Concrete Surface:◆ Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms and 2 Ltr of Primer per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803	Sqm	730.93	450.00	3,28,919			2361.68	10,62,756.00	2361.68	10,62,756.0	

5265.00

175.13

249.00

2364.00

NO	CODE												
21	21	KSRRB M800 Road markers / Road stud KSRRB M800-35. Supply and Installtion of Moulded Shank Raised Pavement Markers made of polycarbonate and ABS (Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000 kg tested in accordance to Specifications of Category A of MORTH Circular No RW/NH/33023/10-97 - DO III Dt 11.06. 1997. The height, width and length shall not exceed 50 mm, 100 mm and 102 mm and with minimum reflective area of 13 Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19 mm and height not less than 30mm) from the body is to be a minimum value of 500 Kg. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer with 2 years warranty for the reflectivity from the original manufacturer is mandatory along with necessary test certification from the certified laboratory. Third party test certificates from a reputed test laboratory shall be submitted with Seal and Signature in Originals.	Nos	2370.00 3147-0	350.00	8,29,500		-	3147.00	11,01,450.00	3147.00	11,01,450.0	
22	22	Retro-Reflectorised Traffic Signs Providing and fixing of retro - reflectorised cautionary, mandatory and informatory sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing. 900 MM Equilaterial triangle -Type XI	No	100 20.00	5000.00	1,00,000		-	100.00	5,00,000.00	100.00	5,00,000.0	
23	23	Retro-Reflectorised Traffic Signs Providing and fixing of retro - reflectorised cautionary, mandatory and informatory sign as per IRC:67 made of high intensity grade sheeting vide Clause 801.3, fixed over aluminium sheeting, 1.5 mm thick supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M 15 grade cement concrete 45 cm x 45 cm x 60 cm, 60 cm below ground level as per approved drawing. 600 MM Circle -Type XI	No	77-0 10.00	4000.00	40,000		-	77.00	3,08,000.00	77.00	3,08,000.0	
24	24	KSRRB 300-1. Earthwork excavation by manual means for roads, drains & similar works in ordinary soil excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specifications. MORTH I Chapter 3	Cum	12993.72 11297.40	100.00	12,99,372	7040.51	7,04,051.0	4226.49	4,22,649.17	11267.00	11,26,700.2	

NO	CODE												
25	25	KSRRB M800-29.2. Providing and laying of a reinforced cement concrete pipe duct, 300 mm dia, across the road (new construction), extending from drain to drain in cuts and toe of slope to toe of slope in fills, constructing head walls at both ends, providing a minimum fill of granular material overtop and sides of RCC pipe as per IRC:98-1997, bedded on a 0.3 m thick layer of granular material free of rock pieces, outer to outer distance of pipe at least half dia of pipe subject to minimum450 mm in case of double and triple row ducts, joints to be made leak proof,invert level ofductto be above higher than ground level to prevent entry of water and dirt, all as per IRC: 98- 1997 and approved drawings complete as per specifications. Case -II: Double row for two utility services	m	220.50 170.00	3500.00	7,71,750	169.80	5,94,300.0		-	169.80	5,94,300.0	
26	26	Providing and stone dust in foundation upto plinth to required depth for sub soil treatment including watering ramming with all lead and lift complete as per specifications and as per directions of engineer in charge	Cum	460.69 2701.70	2000.00	9,21,380	460.69	9,21,380.0	2188.92	43,77,844.00	2649.61	52,99,224.0	
27	27	KSRRB M2200-5.1 Providing and laying cement concrete of mix 1:2:4 with OPC @ 240kgs, with 40mm and down size graded granite metal coarse aggregates @0.63cum and fine aggregates @ 0.42cum including cost of materials, labour, HOM curing, form works, scaffolding and centering complete as per MORTH Section 2200 & IS 456 a) upto 5mtr heigh~ (M 15) (PW RR IWTD SR	Cum	951.59 3051.26	5000.00	47,57,950	951.58	47,57,900.0	1033.80	51,69,018.59	1985.38	99,26,918.6	
28	28	KSRRB M2200-5.9. Providing and laying Design mix M20 with OPC @ 320kgs, with 20mm and down size graded granite metal coarse aggregates @0.69cum and fine aggregates @ 0.46cum, with superplastisiser @31ts confirming to IS91 03-1999 Reaffirmed-2008 including cost of materials, labour, HOM curing, form works, scaffolding and centering complete as per	Cum	2797.00 2291.14	6300.00	1,76,21,100	1808.40	1,13,92,893.8	481.80	30,35,351.39	2290.20	1,44,28,245.2	
29	29	KSRRB M2200-6. Providing T.M.T. steel reinforcement for R.C.C. work including straightening, cutting, bending, hooking, placing in position, lapping and/or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per disign (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM complete as per specification. MORTH Specification No.1600 &	MT	153.22 148.92	62000.00	94,99,640	105.51	65,41,620.0	35.64	22,09,920.25	141.15	87,51,540.3	
30	30	Supplying HDPE pipes confirming to IS 4984:1995 with latest amendments and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and joining of pipes and specials including encasing the pipe around to a depth of not less than 15cm with soft gravel or selected earth available from the excavation etc., complete, giving hydraulic test as per relevant ISS with all lead and lift including testing and commissioning, The rate is exclusive of required specials and fittings etc., complete (Contractor will make his own arrangement for procuring water for testing) 110mm dia for OFC /Telecom /Surveillance Complete including all lead and lifts and as per the directions of engineer in charge.	Rmt	7800.00 7840.00	400.00	31,36,000	7751.05	31,00,420.0		-	7751.05	31,00,420.0	
31	31	Supply,fabrication and fixing of cast iron items such as recess manhole covers,bollards,manhole covers with gratings,etc as per approved drawing and confirming to BS-EN-124-B-124 standards(PW,P & IWTD SR 2016-17,Pg No VIII Sl No.223 Code	Kgs	16700.00 9234.94	140.00	23,38,000	1198.73	1,67,821.9	8036.21 5796.34	11,25,069.30 9614870	9234.94 7995.07	12,92,891.2	1119309.50

32	32	Supplying PVC ringtite pipe confirming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour, with all lead & lift including encasing the pipe alround to a depth of not less than 15cms with soft gravel or selected earth avilable from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing). 25 - 10 Kg/Cm2 (Class5)	Rmt	46.50 30.00	70.00	2,100		-	46.50	3,255.00	46.50	3,255.0
33	33	Supplying PVC ringtite pipe confirming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour, with all lead & lift including encasing the pipe alround to a depth of not less than 15cms with soft gravel or selected earth avilable from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing). 32 - 10	Rmt	30.00 49.50	80.00	2,400		-	49.50	3,960.00	49.50	3,960.0
34	34	Supplying PVC ringtite pipe confirming to IS 4985:2000 with latest amendments and conveying to worksite, rolling and lowering into trenches, laying true to line and level and perfect linking at joints, testing and commissioning, including loading and unloading at both destinations and cuts of pipes wherever necessary including jointing of PVC pipes and specials (excluding cost of specials) with jointing of approved type, with all labour, with all lead & lift including encasing the pipe alround to a depth of not less than 15cms with soft gravel or selected earth avilable from the excavation etc. complete and giving necessary hydraulic test to the required pressure as per ISS (Contractor will make his own arrangements for procuring water for testing). 50 - 6	Rmt	70.50 30.00	150.00	4,500		-	70.50	10,575.00	70.50	10,575.0
35	35	KSRRB 300-58. Compaction of original ground with maximum of 6 passes of 8 to 10 tonnes power roller including filling in depresion occuring during rolling including cost of all labour, HOM of machinery complete as per specifications. MORTH / Chapter 3	Sqm	7900.00	15.00	1,18,500		-					
36	36	Filling in foundation with granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with lead up to 50m and lift 1.5m complete as per specifications. a)40mm	Cum	61.53	1900.00	1,16,907		-					
37	37	Filling in foundation with granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with lead up to 50m and lift 1.5m complete as per specifications. c) 20mm	Cum	61.53	2000.00	1,23,060		-					
38	38	Filling in foundation with granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with lead up to 50m and lift 1.5m complete as per specifications. d) Coarse sand. (Data Rate)	Cum	46.15	2600.00	1,19,990		-					

39	39	Filling in foundation with granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with lead up to 50m and lift 1.5m complete as per specifications. e) Fine Sand	Cum	30.77	2600.00	80,002		-		-		-		
40	40	Filling in foundation with granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with lead up to 50m and lift 1.5m complete as per specifications. f) 12.5mm	Cum	46.15	1900.00	87,685		-	177.29	3,36,843.82	177.29	3,36,843.8		
41	41	Supplying and erection of R.C.C Rings for well steining of 0.3m depth using M-20 grade cement concrete using clean graded granite or trap or jelly of approved quality 20mm and down size well compated includig centering, from work and plastering for both faces with C.M.1:3 proportion as per design using 6.5m M.S. Coil at the rate of 10 KGs/ring including cost of steel and fabrication bailling out of water, errection etc.,(PRECB SR 2012-2013 P-44 ,8.8a-iii) For 1.20m dia(clear) ring of steining thickness 0.075 Mtrs up to 18Mtr depth, For 1.8 Mtr depth Number of	Nos	816.00	1000.00	8,16,000	90.00	90,000.0		-	90.00	90,000.0		
42	42	Providing of Geonets for Rain Water Harvesting pit on top of the filter media as specified in drawings or as approved by Engineer	Sqm	209.38	80.00	16,750		-		-		-		
43	43	Providing and laying 100mm thick pre-cast U-shaped RCC drains using M20 grade Concrete reinforced with steel @ 5 kg per Sqm Precast units and jointed in CM 1:3 proportion and neatly finished including cost of labour, materials, HOM, curing, lead and lift charges etc, Complete as per MORTH specifications No. 1500, 1700 With size of 450 mm x 600 mm inner dimensions	m	3950.00	2100.00	82,95,000	420.00	8,82,000.0		-	420.00	8,82,000.0		
44	44	Providing and laying 100mm thick pre-cast cover slabs over drains of width not exceeding 800 mm using M20 concrete reinforced with steel @ 6.00 kg/Sqm, slabs jointed in CM 1:3 proportion and nicely finished including providing holes in the Cover slabs wherever necessary for easy drainage of surface water including of labour, materials, HOM, curing, lead and lift charges etc, Complete as per MORTH specifications No. 1500, 1700.	m	3950.00	1200.00	47,40,000	2475.10	29,70,120.0	800.60	9,60,720.00	3275.70	39,30,840.0		
45	45	KSRRB M2200-1 Providing weep holes in Brick masonry / Plain / Reinforced concrete abutment, wing wall / return wall with 100 mm dia AC pipe, extending through the full width of the structure with slope of 1V :20H towards drawing foce. Complete as per drawing and Technical Specifications including cost of materials, labour, HOM complete as per specifications. MORTH Specification No.2706 & 2200(PW,P& IWTD SR 2018-19 P-229, I-28.10)	Rmt	39.50	200.00	7,900		-		-		-		
46	46	Providing and fixing pre cast solid cement concrete kerb stones made out of C. C. 1:2:4 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1 :3 plastering and finishing cutting, including form work, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete.	Nos	8781.00	300.00	26,34,300	7907.00	23,72,100.0	1092.00	3,27,600.00	8999.00	26,99,700.0		

47	47	KSRB 14.6-1: Providing and laying heavy duty cobble stones 60mm thick interlock pavers, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS	Sqm	7690.50	900.00	69,21,450	4270.98	38,43,885.2	4819.78	43,37,804.16	9090.77	81,81,689.3
48	48	Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregtes @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 ems. thick, well compacted, for coping. Including cost of all materials, labour, HOM, curing complete as per specifications. Specification No. KBS 4.1, 4.2 (PW,P& IWTD SR 2018-19 P-255, I-34.11)	Cum	59.25	6300.00	3,73,275		-	40.50	2,55,150.00	40.50	2,55,150.0
49	49	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8	Sqm	1046.75	90.00	94,208		-	1567.42	1,41,067.62	1567.42	1,41,067.6
50	50	Providing and laying reinforced cement concrete pipe NP3 for culverts including pointing ends, and fixing collars with cement mortar 1:2 including cost of all materials, labour, curing complete as per specifications. Specifications. No. KSRB 1000, 2300, MOST Specification No.1000 / 2300. 300mm dia.	m	1010.00	1800.00	18,18,000	298.20	5,36,760.0	218.70	3,93,660.00	516.90	9,30,420.0
51	51	KSRRB M300-20. Providing and fixing tree gaurd 0.60 metre square, 2.00 metre high fabricated with MS angle iron 30 x 30 x 3 mm, MS iron 25 x 3 mm and steel wire 3 mm dia welded and fabricated as per design in two halves bolted together complete as per specifications	Each	200.00	2000.00	4,00,000		-		-		-
52	52	KSRRB M200-26. Dismantling Kerb stone by manual means and disposal of dismantled materials with all lifts and complete as per specifications. MORTH Specification No. 202	m	3950.00	25.00	98,750	3558.10	88,952.5	486.80	12,170.00	4044.90	1,01,122.5
53	53	KSRRB M200-15.1. Dismantling of existing structures like culverts, bridges. retaining walls and other structure comprising of masonry, cement concrete, wood work. steel work. including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per specifications. iii) Dismantling Stone Masonry. A. Rubble Stone masonry in cement mortar. MORTH Specification No. 202	Cum	1244.25	350.00	4,35,488		-	253.14	88,597.60	253.14	88,597.5

NO	CODE											
54	54	KSRRB M200-14.2. Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary. sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts complete as per specifications. Dismantling brick / Tile work B. In cement mortar. MORTH Specification No. 202	Cum	500.00	350.00	1,75,000	500.00	1,75,000.0	686.57	1,40,300.74	1186.57	2,25,300.7
55	55	KSRRB M200-25. Dismantling of guard rails by manual means and disposal of dismantled materials with all lifts and stacking serviceable materials and unserviceable materials separately complete as per specifications. MORTH Specification No. 202	m	1000.00	100.00	1,00,000						
56	56	KSRRB M200-32. Removal of Telephone / Electric poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department, disposal with all lifts and stacking the serviceable and unserviceable material separately complete as per specifications. MORTH Specification No. 202	Nos	84.00	302.85	25,439						
57	57	KSRRB M300-19. Removal of unserviceable soil including excavation, loading and disposal but excluding replacement by suitable soil which shall be paid separately as per clause 300.5 complete as per specifications. MORTH Specification No. 301	Cum	15757.36	50.00	7,87,868			6749.88	3,37,493.75	6749.88	3,37,493.8
58	58	KSRRB M-100-1 Loading and Unloading of Stone Boulder / Stone aggregate / Sand Kanker / Moorum.KSRRB M100-1 : Placing tipper at loading point, loading with front end loader, dumping, turning for return trip, excluding time for haulage and return trip complete as per specifications.MORTH -100 / Chapter 1	cum	21889.59	65.00	14,22,823	8149.03	5,29,687.0	11943.44	7,76,323.41	20092.47	13,06,010.4
59	59	KSRRB M100-4.1. Cost of Haulage Excluding Loading and Unloading MORTH -100/ Chapter 1 Case-1 : Surface Road	cum	21889.59	80.24	17,56,421	8149.03	6,53,878.2	11973.69	9,60,758.65	20122.72	16,14,636.9
		BOQ Total				**12,50,66,296**		**7,17,56,064.3**		**2,61,42,579.8**		**10,78,98,644.1**
		EIRL										
60	EI-1	KSRB 5-14: Providing and constructing load bearing wall withsolid concrete blocks having block density not less than 1800 kg/m3 having a minmum average compressive strength of 4 n/mm2 confirming to is 2185 (part 1) :2005 and constructed with CM 1:4 , as per IS 2572:2005 including cost of all materials labour charges , scaffoding , curing hire charges of machineries etc., complete as per specification .KBS NO5.4. 5.26.1- do - with solid	Sqm	392.00	1029.91	4,03,725	211.31	2,17,628.2	126.52	1,30,308.13	337.83	3,48,036.3
61	EI-2	Supplying HDPE pipes confirming to IS 4984:1995 with latest amendments and conveying to work site including loading and unloading at both destination and rolling, lowering into trenches, laying true to line and joining of pipes and specials including encasing the pipe around to a depth of not less than 15cm with soft gravel or selected earth available from the excavation etc., complete, giving hydraulic test as per relevant ISS with all lead and lift including testing and commissioning, The rate is exclusive of required specials and fittings etc., complete (Contractor will make his own arrangement for procuring water for testing) 200mm dia for Power Complete including all lead and lifts and as	Rmt	8040.00	1026.33	82,51,693	7795.05	80,00,293.7	1111.00	11,40,252.63	8906.05	91,40,546.3

NO	CODE											
62	EI-3	Supplying and drawing Flexible Multicore Cable manufactured with electrolytic grade flexible copper with low conductor confirming to IS:8130-1984 and (Virgin) PVC insulation sheathed suitable for working voltage upto 1100Volts as per IS-694:1990 3C X 1.5Sq.mm	Mtr	144.00	69.69	10,035			144.00	10,035.36	144.00	10,035.4
63	EI-4	Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output. Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mouting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with W System Power consumption. LED Efficiency>130lm/w, nominal CRI >75. Luminaire manufacturer should have in-house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008 . Housing with supplier word mark /name shall be	No	24.00	7854.77	1,88,514			24.00	1,88,514.48	24.00	1,88,514.5
64	EI-5	Supply of LED Streetlight luminaire with pressure die cast aluminium housing body for optimal thermal dissipation. Lamp compartment comprising of anti glare clear diffuser with Injection moulded polycarbonate material, delivering superior light output. Rated life Burning Hrs 50000 hr @ Lumen Maintenance of 70%, maximum light intensity should be between 60 degrees to 70 degrees. CCT > 5500K, IP 66 optical and electrical compartment & impact resistance of complete luminaire > IK08. Power Factor >0.9 with mains, Surge Protection- Min 5KV along with Over voltage/ Overload, short circuit/ miss-wiring protection. Compatible for pole mouting with outer dia of 40mm to 50mm. Universal Voltage driver to operate wide voltage range from 100V to 270V 50/60Hz application. Compliance to IS 10322/IEC 60598, LM 79 & LM 80 Adherence with RoHS. UL approved MCPCB. Top access street light with single screw to ensure ease of maintenance at the sight site location with minimized minimal tools. LED Light fixture with W System Power consumption. LED Efficiency>130lm/w, nominal CRI >75. Luminaire manufacturer should have in-house facility accredited by NABL/CPRI & any Government certified agency & Design & Development facility certified by ISO 9001:2008 . Housing with supplier word mark /name shall be	No	24.00	10097.98	2,42,352			24.00	2,42,351.52	24.00	2,42,351.5

65	EI-6	**Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure** works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork to be paid separately) M20 Design Mix Using 20 mm nominal size graded crushed coarse aggregates (V-1,P.No.17, I.No.2.4.2 of PWD SR 2021-22)	Cum	9.00	8951.1048	80,560		-	9.00	80,559.94	9.00	80,559.9
66	EI-7	Earth work excavation for cable trench of 0.3 to 0.5 Mtr. Width and Depth upto 1 Mtr including trial pits, depositing on bank upto a lead of 50 Mtr, Supplying and Displaying necessary Danger Boards and Lighting, Using sight Rails and Sign Boards at every 100 Mtr wherever necessary as directed.In Ordinary Soil.	Cum	187.20	262.6	49,159		-	187.20	49,158.72	187.20	49,158.7
67	EI-8	Laying of cable in Existing Trench/GI pipe/Stone Ware/RCC Hume pipe using Wooden/Aluminum Rollers as directed by the departmental staff LT Cable.2.5 to 25 Sqmm.	Km	0.65	16320.59	10,608		-	0.65	10,608.38	0.65	10,608.4
68	EI-9	Refilling the cable trenches with selected available earth from trench excavation including watering, consolidation in layers of 15 cm. Thickness including depositing of the surplus earth with a lead of 200 Mtr	Cum	151.20	58.58	8,857		-	151.20	8,857.30	151.20	8,857.3
69	EI-10	Fixing halogen/metal halide / SVL / IL / LED floodlight fitting over existing pole / wall ceiling including clamps, bolts, nuts and wiring using suitable capacity wires.	Each	48.00	190.89	9,163		-	48.00	9,162.72	48.00	9,162.7
70	EI-11	Fabricating, Supplying and errection of decorative Zig- Zag bent type Street light pole with hot dip Galvanized with BSEN 10025 grade S 355 JO Steel plate for shaft, IS 2062 for base plate with door opening arrangements, including suitable boards, Bakelite sheet for MCBs as per IS Specifications.suitable to with stand the wind speed. The total height of the pole 7 mtrs towards road and 5 Mtrs footpath.between the pole V shaped MS/any decorativ laser cutting jolly work The pole should have 2 nos of pole esthetically bent either side. The dimensions of the pole bottom square pipr of 175x175x4mmx2 Mtrs length and above 2 mtrs a dia of 76.1x3.25mmx5Mtrs and 3 Mtrs, as suitable to the Drawing and picture. The base plate size of 350mm x 350mm x 16 mm the pole shall be galvanized with not less than 65 micron etc and finally finished with PU paint as required with two different colour. (With out foundation). As per the enclosed Drawing ,pictures and IS standards compleet set includes templat 4 nos M20 x750mm anchor bolts.	No	24.00	90647.5	21,75,540		-	24.00	21,75,540.00	24.00	21,75,540.0

NO	CODE											
71	EI-12	Supllying of1.1 kV, XLPE or Heat resistant PVC insulated, PVC exutruted Inner Seath Armoured LTUG Cable as per IS-1554 (Part-1) or IS-7098 Part-1, Armouring strip thickness and resistivity as per IS-3975 25 Sqmm, 4 Core, (13 GI Strips - 4 x 0.8 mm)	Km	0.65	183266.52	1,19,123			0.65	1,19,123.24	0.65	1,19,123.2
		EIRL Total				**1,15,49,329.6**		**82,17,921.9**		**41,64,472.6**		**1,23,82,394.5**
		Total				**13,66,15,625.7**		**7,99,73,986.2**		**4,03,07,052.4**		**12,02,81,038.6**
		GST 18%						**95,96,879.0**		**72,55,269.4**		**1,68,52,148.4**
		GRAND TOTAL						**8,95,70,865.2**		**4,75,62,321.9**		**13,71,33,187.0**

NCC LIMITED BANGALORE

Infra Support Engineering Consultants Pvt. Ltd. Bengaluru

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